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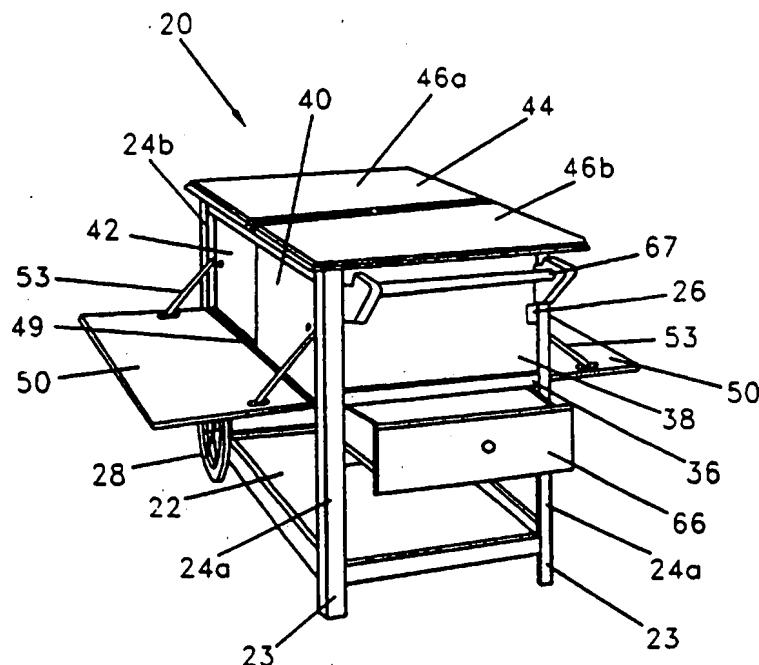
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(54) Title: PORTABLE WORK CENTER



(57) Abstract

A multi-functional, multi-purpose work center which can be used, for example, for transporting, storage and preparation tasks. The work center includes a wheeled frame having a cabinet (26), drop-leaf panels (50) and one or more drawers (66). The work center can be customized to a user's needs. For example, the work center may include a cutting board, a sink or basin (56), an enclosed base, detachable drop-leaves, a fold-out or slide-out cover, and an easel (77), shelf and/or drawer housed in the cabinet.

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## PORTABLE WORK CENTER

This application is a continuation-in-part of U.S. Patent application Serial No. 07/832,388, filed

5 February 7, 1992.

### TECHNICAL FIELD

This invention relates generally to transporting, storage and serving devices. Specifically, the invention relates to a portable work center that is particularly well-suited for organizing and facilitating certain day-to-day living tasks for physically challenged persons who have limited or no mobility or persons who have limited living or work space.

### BACKGROUND OF THE INVENTION

Today, many elderly and physically challenged persons are able to live independently with assistance from personal attendants or the like. Often, these individuals are capable of performing many day-to-day tasks, for example, preparing and serving of a light lunch such as a sandwich. To perform such tasks often requires substantial movement about the person's living quarters. Functioning for such persons would be facilitated if there were devices for consolidating and accommodating certain day-to-day functions in a confined single space.

Various cart devices are, of course, known and commercially available. Some of these prior art cart devices have attempted to respond to particular problems associated with particular industries, e.g., the food service industry or airline industry. For example, U.S. Patent 4,161,234 to Munn, U.S. Patent 3,889,967 to Sauer, U.S. Patent 3,262,714 to Longone, U.S. Patent 2,603,500 to Messler, U.S. Patent 1,455,395 to

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Exum, U.S. Patent 1,240,163 to Abadie, and U.S. Patent 1,163,610 to Brown disclose carts suitable for the transporting, preparing and storage of food, beverage or transporting and storage of dishware. U.S. 5 Patent 2,830,825 to Webber discloses a knock-down type cart with adjustable shelves. U.S. Patent 3,877,744 to Miller discloses a cart suitable for food and beverage service on an aircraft. Various food serving carts have also been disclosed in design patents. See, for 10 example, U.S. Design Patent 268,537 to Craig et al., U.S. Design Patent 175,888 to Hunt and U.S. Design Patent 173,473 to Clarke.

Despite these numerous known designs, the prior art has produced very little in the way of a practical, 15 inexpensive work center that can be customized to the user's needs especially as a mobility aid for the physically challenged.

#### SUMMARY OF THE INVENTION

The present invention provides a multi-functional, 20 multi-purpose cart or portable work center which can be used, for example, for transporting, storage and preparative (including office) tasks. The work center is suitably a mobility aid for individuals who have limited mobility in that it centralizes activities to a 25 single location and can be customized with a variety of features to accommodate the degree of mobility of the user.

The work center in accordance with the present invention includes a wheeled base, four vertical supports extending upwardly from the base, and a cabinet supported above the base. The cabinet has an open top, a bottom, a pair of end walls, a pair of side walls and an interior. A horizontal bipartite cover extends over and covers the top of the cabinet. At least one of the 30 pair of side walls includes superposable sliding doors to provide side access to the cabinet. The work center further includes at least one horizontal drawer disposed 35

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slidably below an end wall of the cabinet, and a handle affixed to an end wall of the cabinet proximate the top of the cabinet to facilitate moving the cart.

The bipartite cover has two members. In one embodiment, the two members are hingedly connected to each other and superposable upon each other. In another embodiment, each member is hingedly connected on an end to the top of an end wall and can be swung open to provide surface space and top access to the cabinet. In a further embodiment, each member is slidably mounted to the top of side walls and the members are slideable in opposite directions across the top of the cabinet. The work center also includes two drop-leaf panels hingedly connected to opposite side portions of the bottom of the cabinet. The panels are stowed in a position coplanar with the side walls and, in use, swing outward and downward to a horizontal position below the plane of the top of the cabinet to form a serving surface or the like.

To customize the work center to individual needs, numerous optional features are provided. For example, the cabinet may house a horizontal panel, such as a cutting board, disposed beneath one member of the cover to provide a closed surface for a portion of the open top of the cabinet. The cabinet may also house a basin configured to fit into a portion of the open top of the cabinet to form a vertical well or sink, a pull-out shelf, a pull-out easel and/or a pull-out lidded drawer.

Additionally, the base of the work center may be enclosed to provide a second cabinet. The second cabinet may have either side wall or end wall superposable sliding doors.

Other advantages and a fuller appreciation of specific adaptations and physical attributes will be gained upon an examination of the following detailed description of preferred embodiments, taken in conjunction with the drawings. It is expressly understood that the drawings are for the purpose of

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illustration and description only, and are not intended as a definition of the limits of the invention.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The preferred exemplary embodiments of the present invention will hereinafter be described in conjunction with the appended drawing wherein like designations refer to like elements throughout and in which:

Figure 1 is a perspective view of one embodiment of the invention;

Figure 2 is a side plan view of the embodiment depicted in Figure 1;

Figure 3 is a front end elevational view of the invention depicted in Figure 1;

Figure 4 is a cross-sectional view taken along line 4-4 of Figure 3;

Figure 5 is a top plan view of the invention of Figure 1;

Figure 6 is a cross-sectional view taken along line 6-6 of Figure 5;

Figure 7 is a top plan view of the invention depicting a sink and a cut away section showing the open top of the cabinet;

Figure 8 is a perspective view of the invention showing a pull-out cabinet shelf;

Figure 9 is a perspective view of the invention showing a pull-out cabinet easel;

Figure 10 is a perspective view of the invention showing a pull-out lidded drawer;

Figure 11 is a cross-sectional end view showing the relative positioning of the shelf, the easel, and the drawer and lid;

Figure 12 is an exploded view of the cabinet showing the construction elements for the shelf, the easel, and the drawer and lid;

Figure 13 is a side view of an embodiment of the invention showing with fold-out cover;

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Figure 14 is a side view of an embodiment of the invention showing the slide-out cover;

Figure 15 is a top plan view of the embodiment of Figure 14 with the sliding cover members out.

5 Figure 16 is a perspective view of the embodiment of Figure 14.

Figure 17 is a side view of an embodiment of the invention showing detachable drop-leaf side panels;

10 Figure 18 is a side view of an embodiment of the invention showing a second cabinet with side wall sliding doors; and

Figure 19 is an end view of the embodiment of Figure 18 showing end wall sliding doors.

#### DETAILED DESCRIPTION

15 The present invention relates broadly to devices for transporting, storing, serving and working upon a variety of articles that are common in a home, office, hospital, etc. However, the present invention is most particularly suited for centrally organizing and  
20 facilitating certain day-to-day activities of persons of limited or no mobility. Such activities may include as preparation of a light lunch or the like or drawing on an easel. Accordingly, the present invention will now be described in detail with respect to such endeavors;  
25 however, those skilled in the art will appreciate that such a description of the invention is meant to be exemplary only and should not be viewed as limitative on the full scope thereof.

30 The invention provides a multi-purpose, multi-functional work center that can accommodate, for example, storage, food service and preparation, and transport in a unitary structure which can be customized to the user's desired activities. The unitary structure includes a wheeled frame with a top serving or work surface, a cabinet disposed on the frame and shelves for storage or transport. The cabinet may also include a sink or basin, a cutting board, drawer, easel or shelf.  
35

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Reference is initially made to Figures 1-6. In accordance with one aspect of the invention, the multi-functional work center 20 includes a substantially rectangular and horizontal base 22, four vertical supports 24 extending upwardly from the corners of base 22 (a front pair 24a and a rear pair 24b) and a substantially rectangular cabinet, generally designated as 26, substantially supported and affixed to supports 24 above the base 22. Base 22 is provided with wheels 28. In the illustrated embodiment, work center 20 has two wheels 28 disposed at one end of the base 22 and two supports 24 which extend downwardly from base 22 to act as legs 23 on a floor surface. Work center 20 may also include two sets of wheels, a front set and a rear set, as seen, for example, in Figure 13. Wheels 28 are attached to base 22 as fixed axle wheels and are positioned immediately outward of the opposed side of base 22. Each wheel is mounted on a complete axle 30 fixed in a block 32 which is affixed to the base 22 and to one of the back supports 24.

The cabinet 26 includes an open top 34, a bottom 36, a pair of end walls 38, and a pair of side walls 40, and an interior 43. One side wall 40, and optionally both side walls, suitably include a pair of sliding, superposable doors 42 so that the interior 43 of cabinet 26 can be accessed from the side. A movable bipartite cover 44 extends over the top 34 of cabinet 26.

Work center 20 also includes at least one, and optionally two, horizontal drawers 66 which are slidably disposed below the end walls 38. Drawer 66 is suitably a "self-closing" drawer. Work center 20 further includes a handle 67 affixed to an end wall 38 opposite wheels 28 to facilitate moving (e.g., typically, pushing) the cart. Optionally, a second handle is suitably affixed to the other end wall opposite the first handle 67.

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Work center 20 also suitably includes two drop-leaf panels 50 hingedly connected to the opposed sides of bottom 36 with hinges 49. These panels 50 have a stowed position in which the panels are substantially vertical and overlie doors 42 and/or side wall 40 and are fixed in the stowed position by, for example, magnets 51 on panels 50 corresponding to magnets 52 (see, Figure 3) on cabinet 26. As best seen in Figure 1, in use, panels 50 pivot outward and downward to a position which is substantially horizontal and coextensive with the bottom 36 of cabinet 26 and held by braces 53. The distance from the floor of each of panels 50 when in use is suitably about the same as a conventional coffee table so that the panels may serve a function such as food or beverage service. As seen in Figure 17 and described hereinafter, drop-leaves 50 are also suitably detachable.

Customizing of the work center to individual needs is further accomplished by a variety of optional features and accessories. Several optional accessories are suitably housed within the cabinet 26. As best seen in Figure 7, a portion of top 34 of cabinet 26 may be covered by a horizontal panel 54, for example, a cutting board, useful for food preparation. A portion of top 34 may also include a sink or basin 56, for example, of the plastic dish pan type, configured to fit into top 34. Sink 56 is suitably supported on an inlay 58 which is configured with its outside periphery 60 to fit a portion of opening of top 34 and its inner periphery 62 dimensioned so that sink 56 fits through the opening and its rim 64 rests on inlay 58.

Figure 8 depicts a pull-out shelf 70 housed in cabinet 26. As best seen in Figures 11 and 12, the sides 72 of shelf 70 fit into shelf slides 74 mounted to a side wall 40 and a center divider panel 76 enabling it to be pulled in and out for use and storage.

As seen in Figures 9, 11, and 12, cabinet 26 suitably houses a pull-out easel 77. Easel 77 includes

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an easel face 78, a prop bar 80 attached to the easel face 78 by a hinge 79, a rest bar 82, and slide pins 84 which fit into slide grooves 86 in the side wall 40, and center divider panel 88 allowing the easel 77 to be pulled out and tilted down to rest on the unfolded drop-leaf panel 50 for use.

Figures 10, 11, and 12 show a lidded, pull-out drawer 90 which consists of a front panel 92 with a cut out notch 94 to serve as a handle, a back panel 96, a bottom 97, side panels 98 which have drawer slides 100 attached to them, a top 102 that is fixed to the back panel 96. Top 102 suitably bipartite with a fixed portion 103 fixed to back 96 and side panels 98 and a hinged portion 105; the two portions are attached by a hinge 107. Drawer 90 may be further framed by a frame top 108 and a frame back 109. Complementary drawer slides 104 are attached to the side wall 40 and a center divider panel 88 so the drawer can be slid in and out for use and storage.

Depending on the user's need for work surfaces, the cover 44 includes two members 46a and 46b which are suitably hinged together with, for example, a piano hinge 48 (see, Figure 2), so that one panel is superposable on the other. For example, when cover 44 is covering top 34, panel 46a may be hingedly placed over panel 46b exposing only one-half of top 34. Alternately, the two members 46a and 46b of cover 44 are hingedly attached, each at one end to the top of an end wall 38 so they can be unfolded out to rest on slides 110 which are pulled out from the cabinet 26 to support the cover panels, as shown in Figure 13. In another illustrated form, the two cover members 46a and 46b can be attached to slides 110 so they can be slid in and out over the end walls 38 as shown in Figures 14, 15 and 16. These latter embodiments of cover 44 provide surface space, yet provide access to cabinet top 34.

Drop-leaf panels may be suitably affixed in a detachable manner, as shown in Figure 17. The drop-leaf

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panels 50 contain a groove 112 along one edge which fits over a hinge 114 anchored to the bottom 36 of the cabinet 26. The drop-leaf panels 50 are supported by a detachable chain 116.

5 As seen in Figures 18 and 19, the base of the work center may be suitably enclosed to form a second cabinet 118. Similar to cabinet 26, cabinet 118 suitably has superposable, sliding side wall panels 118 and/or superposable, sliding end wall panels 120, as shown in Figure 18. Cabinet 118 provides further storage area for work center 20.

10 In summary, the present invention provides a wheeled work center that can be customized for transporting and storage. The work center is 15 particularly useful for persons having limited space and limited mobility. For example, a physically challenged individual who requires the services of a personal attendant may attend to various activities and tasks organized and located on the work center in between 20 visits of the attendant. The work center can be set up for tasks such as food preparation and service. The work center in accordance with the present invention can also be customized for other user needs. For example, 25 the cart may be used as a portable credenza in the office environment. Cabinet 26 can be used to store files. Cover 44 could hold a facsimile machine or the like.

30 While the present invention has now been described and exemplified with some specificity, those skilled in the art will appreciate the various modifications, including variations, additions, and omissions, that may be made in what has been described. Accordingly, it is intended that these modifications also be encompassed by the present invention and that the scope of the present 35 invention be limited solely by the broadest interpretation that lawfully can be accorded the appended claims.

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CLAIMS:

1. A portable work center, comprising:  
a base,  
vertical supports extending upwardly from said  
base,  
wheels supporting said base and rotatable for  
moving the work center,  
a first cabinet positioned above said base and  
affixed and supported by said vertical supports, said  
first cabinet having an open top, an interior, a bottom,  
a pair of side walls and a pair of end walls, at least  
one of said pair of side walls having sliding doors;  
a bipartite horizontal cover extending over the top  
of said first cabinet,  
a drawer disposed slidably below one of said pair  
of end walls of said first cabinet, and  
a handle affixed to one of said pair of end walls  
of said cabinet proximate said top of said first  
cabinet.
2. The work center of claim 1, wherein said  
bipartite cover has two members hingedly connected to  
each other such that one said member is superposable  
over the other said member.
3. The work center of claim 1, wherein said  
bipartite cover has two members, one of said members  
having an end hingedly connected to the top of one end  
wall, and the other of said member having an end  
hingedly connected to the top of said other end wall.
4. The work center of claim 1, wherein said  
bipartite cover has two members, each of said members  
slidably connected to the top of said first cabinet and  
said members slidable across the top of said first  
cabinet in opposite directions.

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5. The work center of claim 1, wherein said interior of said first cabinet includes a horizontal shelf slidably mounted to slide through an open portion of said sliding doors.

5 6. The work center of claim 1, wherein said interior of said first cabinet further includes an easel.

10 7. The work center of claim 1, wherein said interior of said first cabinet further includes a covered, horizontal drawer slidably mounted to slide through an open portion of said sliding doors.

15 8. The work center of claim 1, further comprising two drop-leaf panels hingedly connected to opposite side portions of said bottom of said first cabinet to be swung outward and downward to a horizontal position below the plane of the top of said first cabinet.

9. The work center of claim 8, wherein said drop-leaf panels are detachable.

20 10. The work center of claim 1, further comprising a horizontal panel disposable beneath said cover to provide a closed surface for said top of said first cabinet.

25 11. The work center of claim 1, further comprising a basin configured to fit into a portion of said open top of said first cabinet to form a vertical well.

30 12. The work center of claim 10, further comprising a basin configured to fit into one portion of said open top of said first cabinet to form a vertical well and wherein said horizontal panel covers the remaining portion of said top of said first cabinet.

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13. The work center of claim 12, wherein said horizontal panel is a cutting board.

14. The work center of claim 1, further comprising a second cabinet positioned below said first cabinet and affixed and supported by said vertical supports, said cabinet having a pair of end walls and a pair of side walls.  
5

15. The work center of claim 14, wherein said second cabinet has side wall sliding doors.

10 16. The work center of claim 14, wherein said second cabinet has end wall sliding doors.

15 17. The work center of claim 1, wherein said wheels include a first pair of wheels supporting an end of said base opposite said end wall having said handle affixed.

18. The work center of claim 17, wherein said wheels include a second pair of wheels supporting the opposite end of said base.

20 19. A portable work center, comprising a first rectangular shaped cabinet disposed on a wheeled frame, said cabinet having a horizontal top, parallel vertical ends, parallel vertical sides extending at right angles to said ends, said sides including sliding doors,

25 a bipartite cover extending over the top of said first cabinet,

A drawer disposed slidably below one of said end walls, and

30 a handle affixed to one of said pair of end walls of said first cabinet proximate said top of said first cabinet.

-13-

20. The work center of claim 19, further comprising a second cabinet positioned below said first cabinet, said second cabinet having parallel ends and parallel sides extending at right angles to said ends, 5 said sides including side wall sliding doors and said ends including end wall sliding doors.

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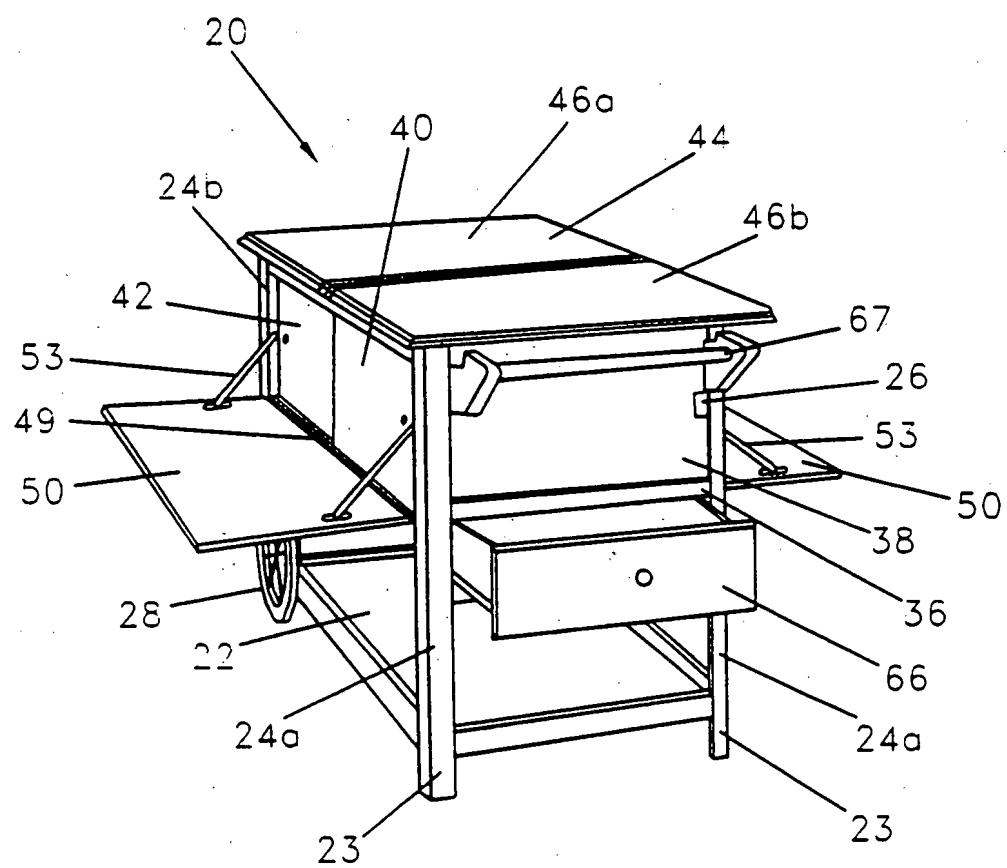


FIG. 1

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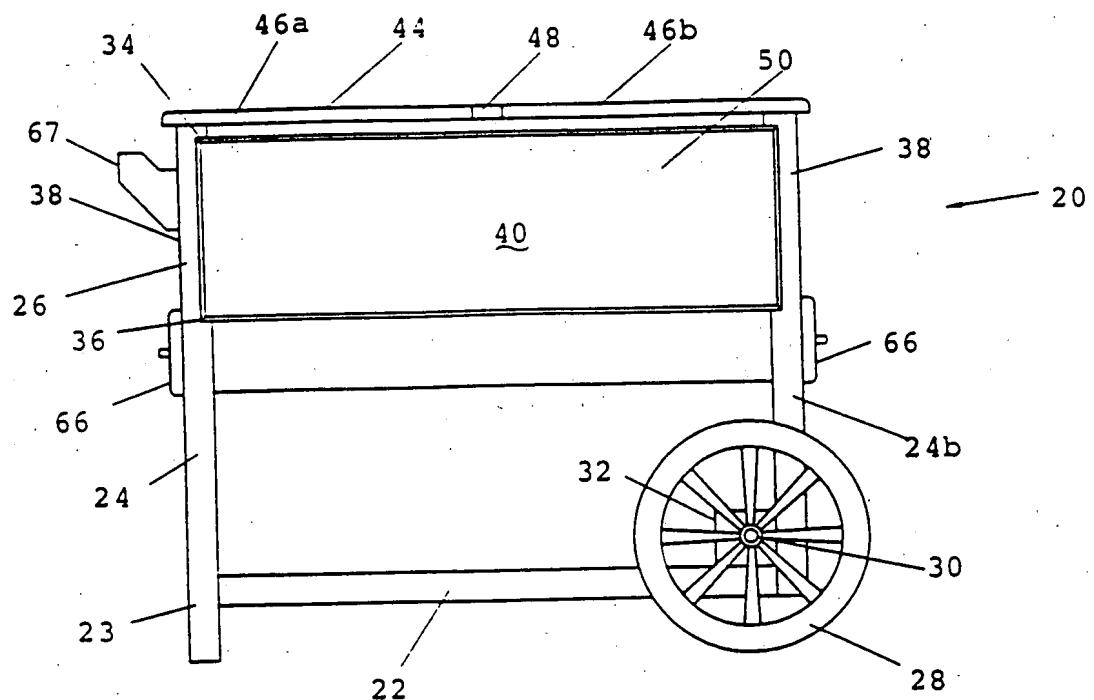


FIG. 2

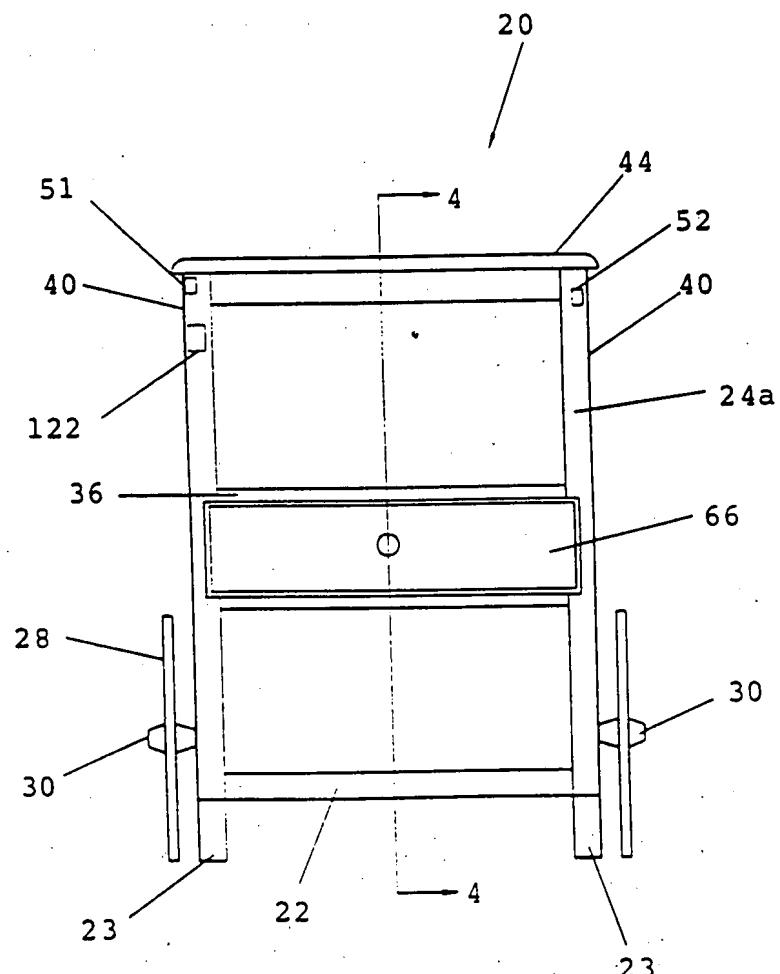


FIG. 3

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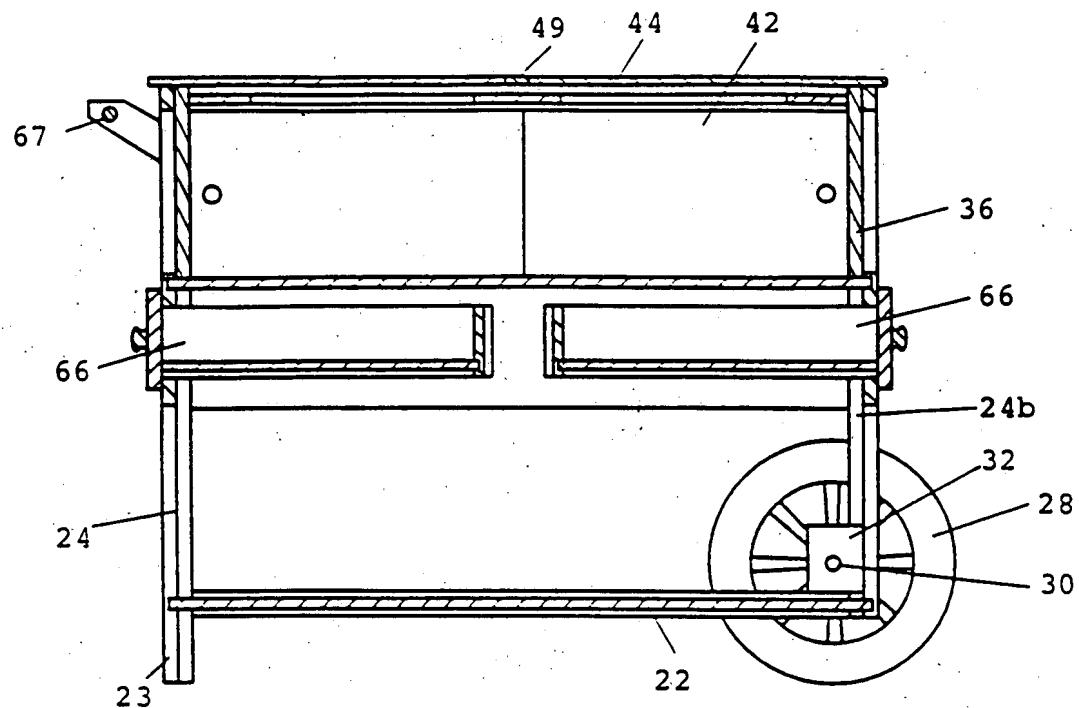


FIG. 4

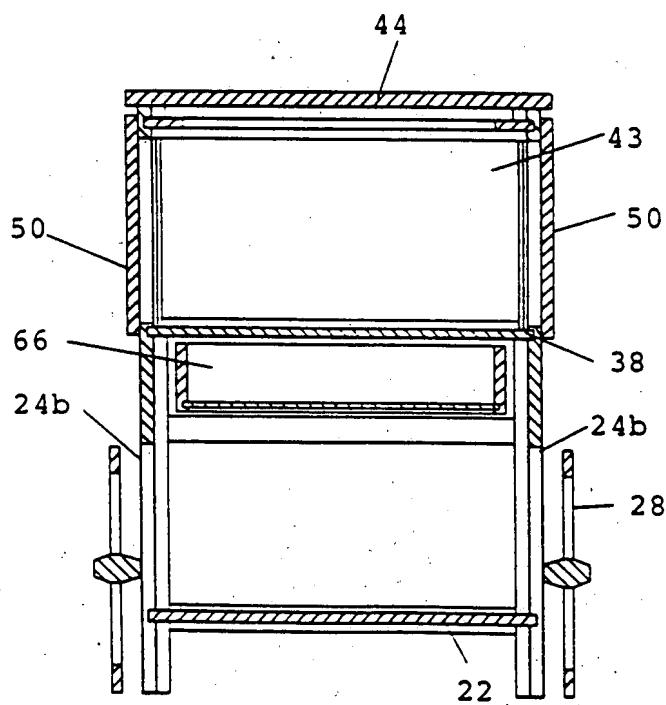


FIG. 6

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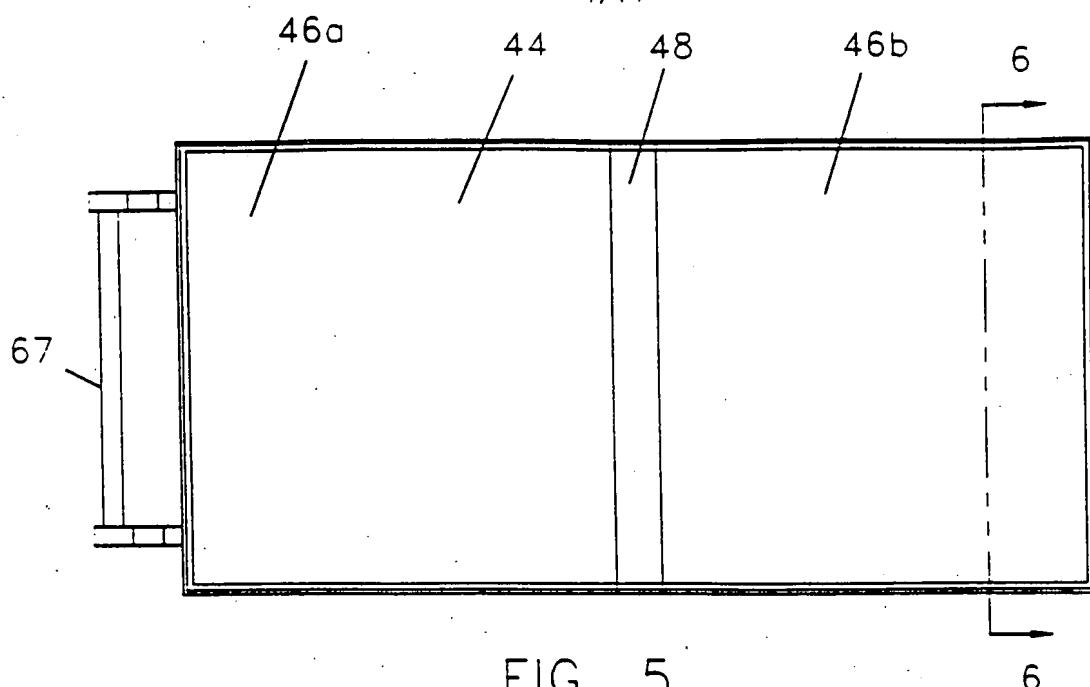


FIG. 5

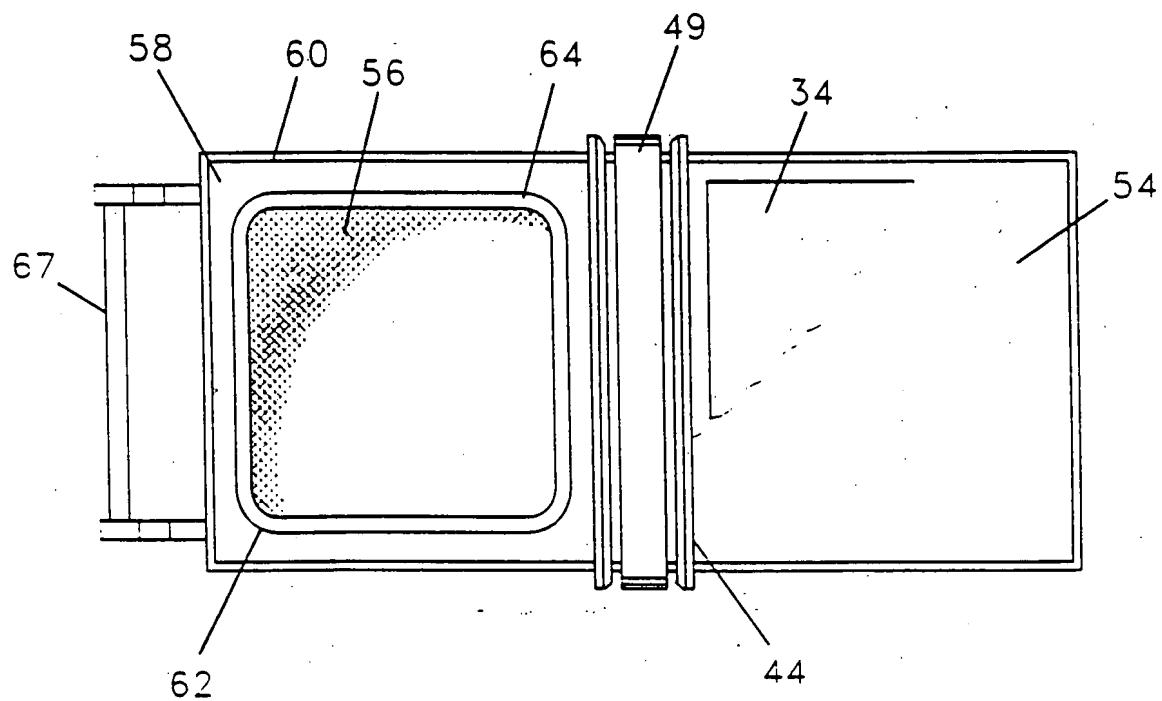


FIG. 7

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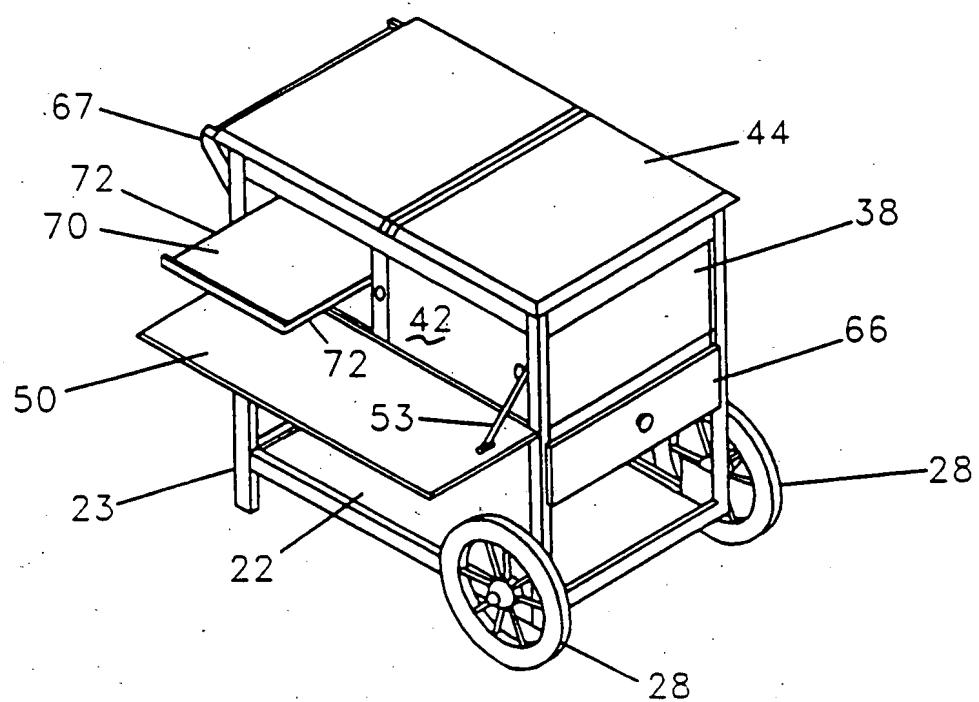


FIG. 8

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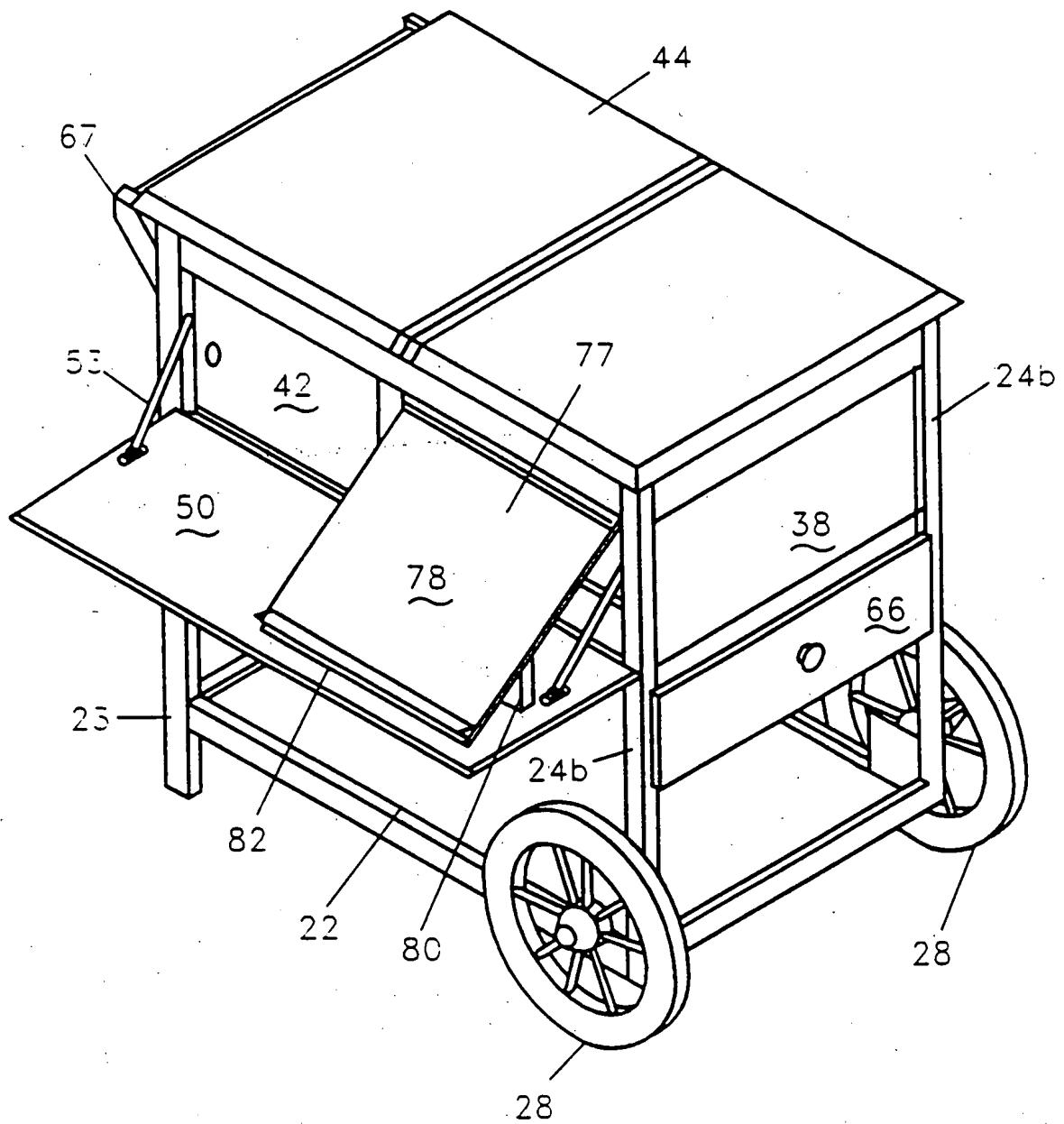


FIG. 9

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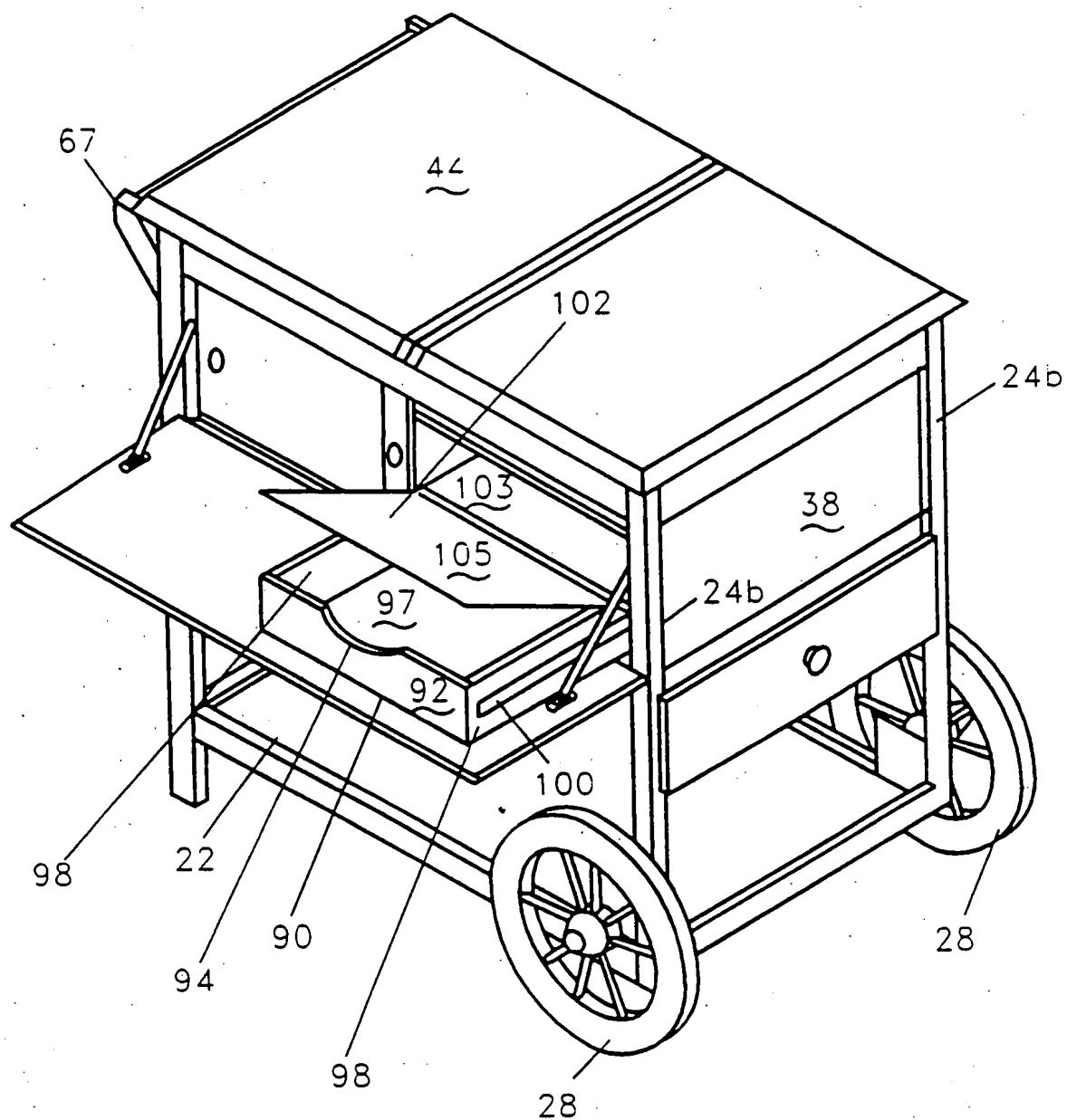


FIG. 10

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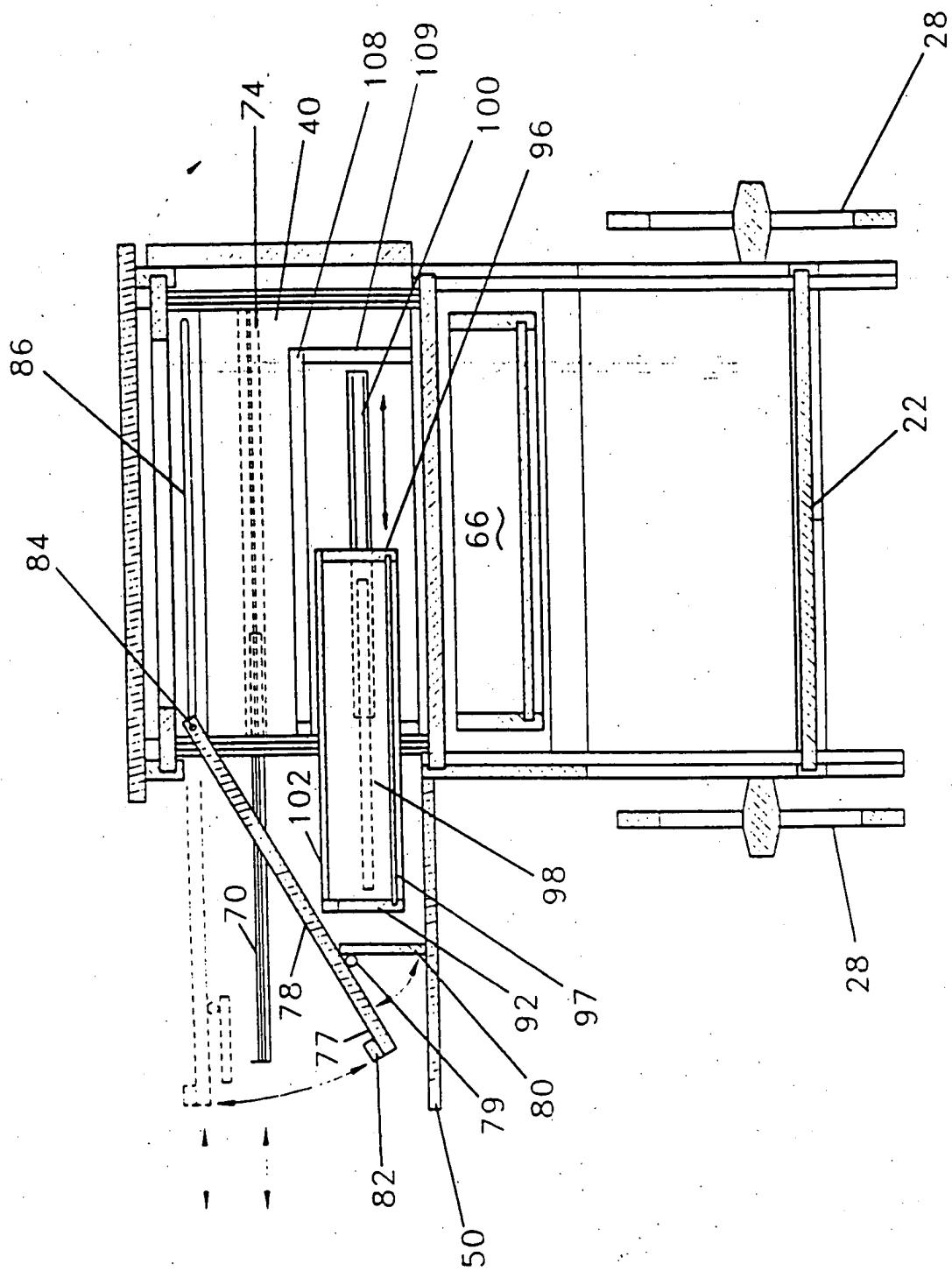
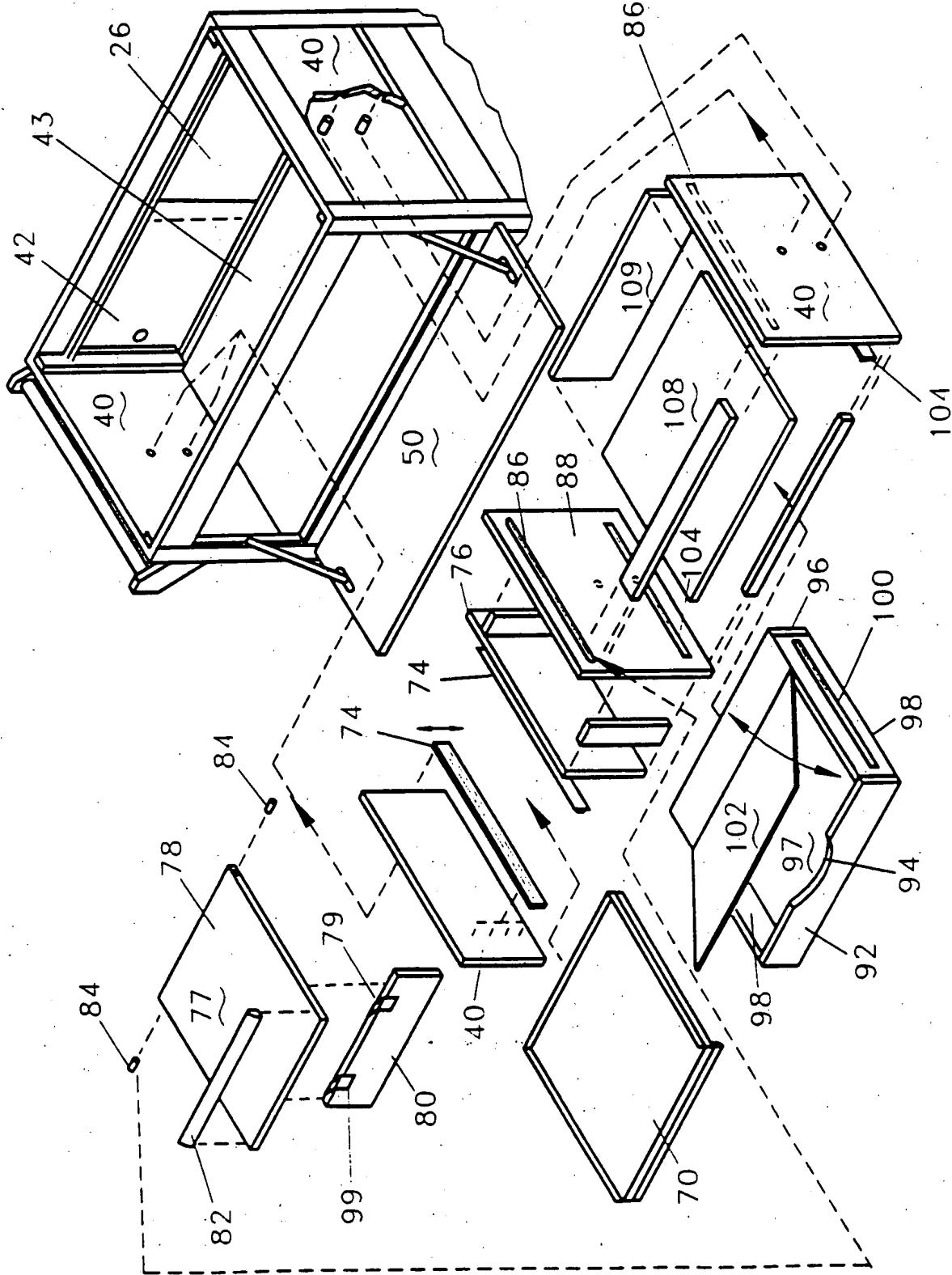


FIG. 11

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FIG. 12



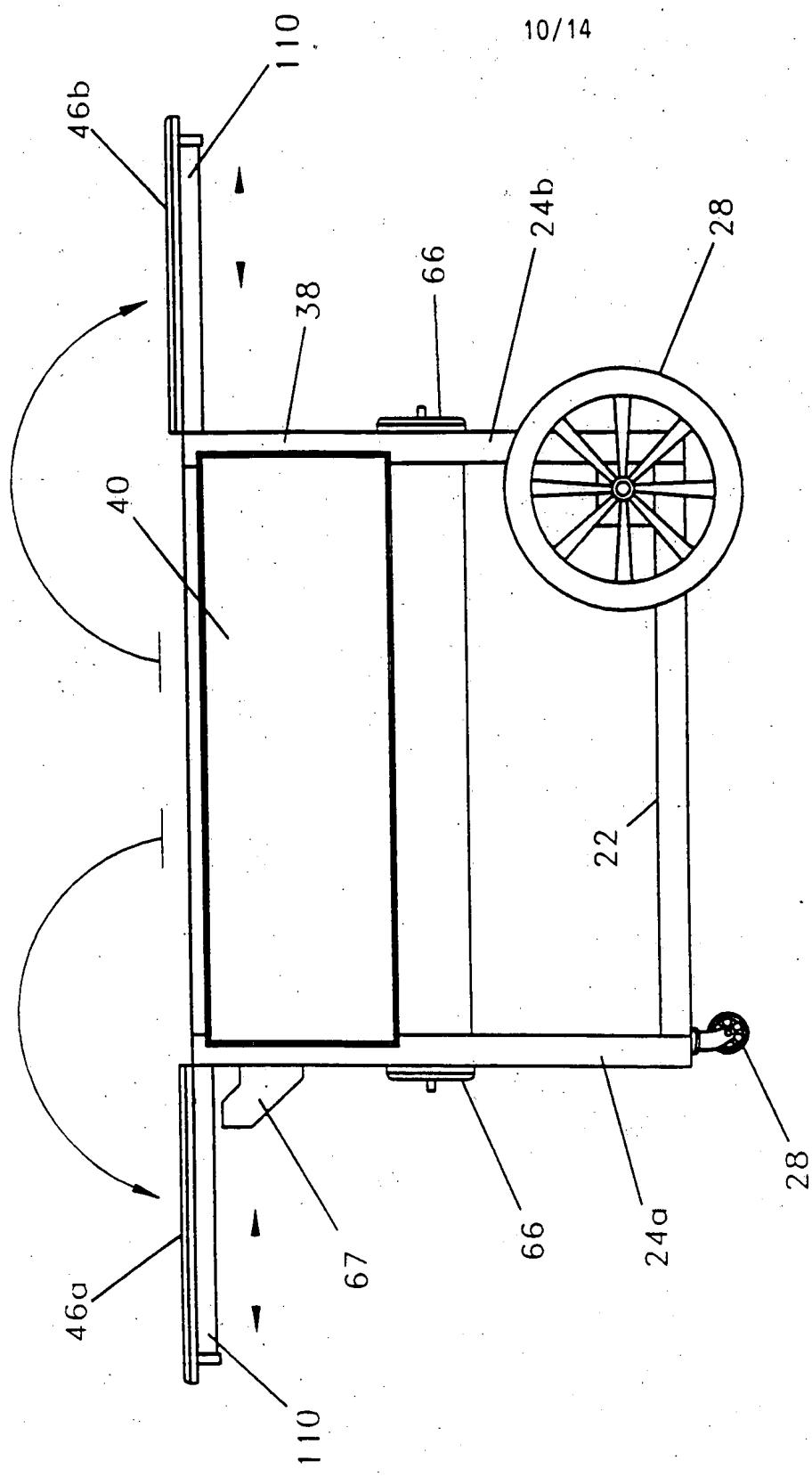


FIG. 13

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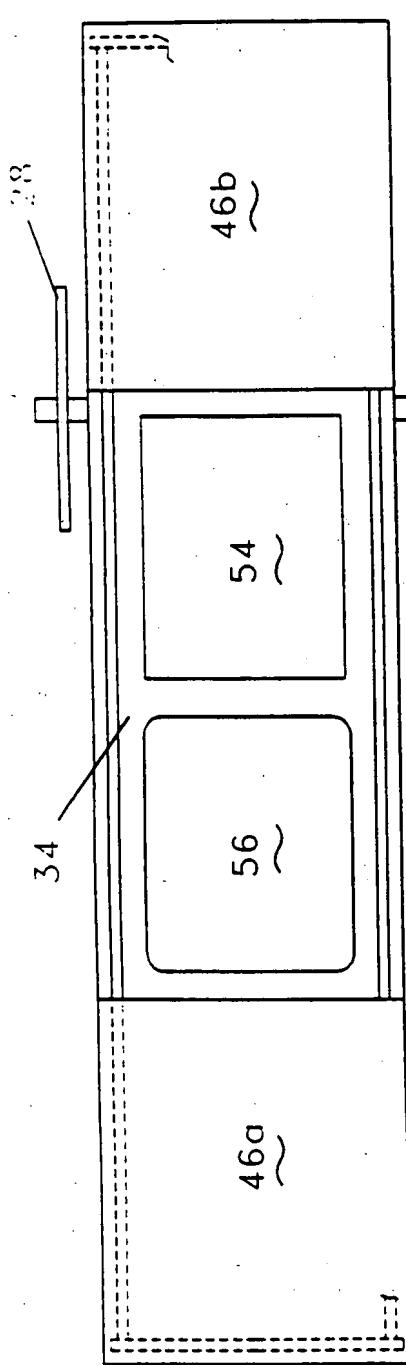


FIG. 15  
46a  
46b  
28  
54  
56  
28

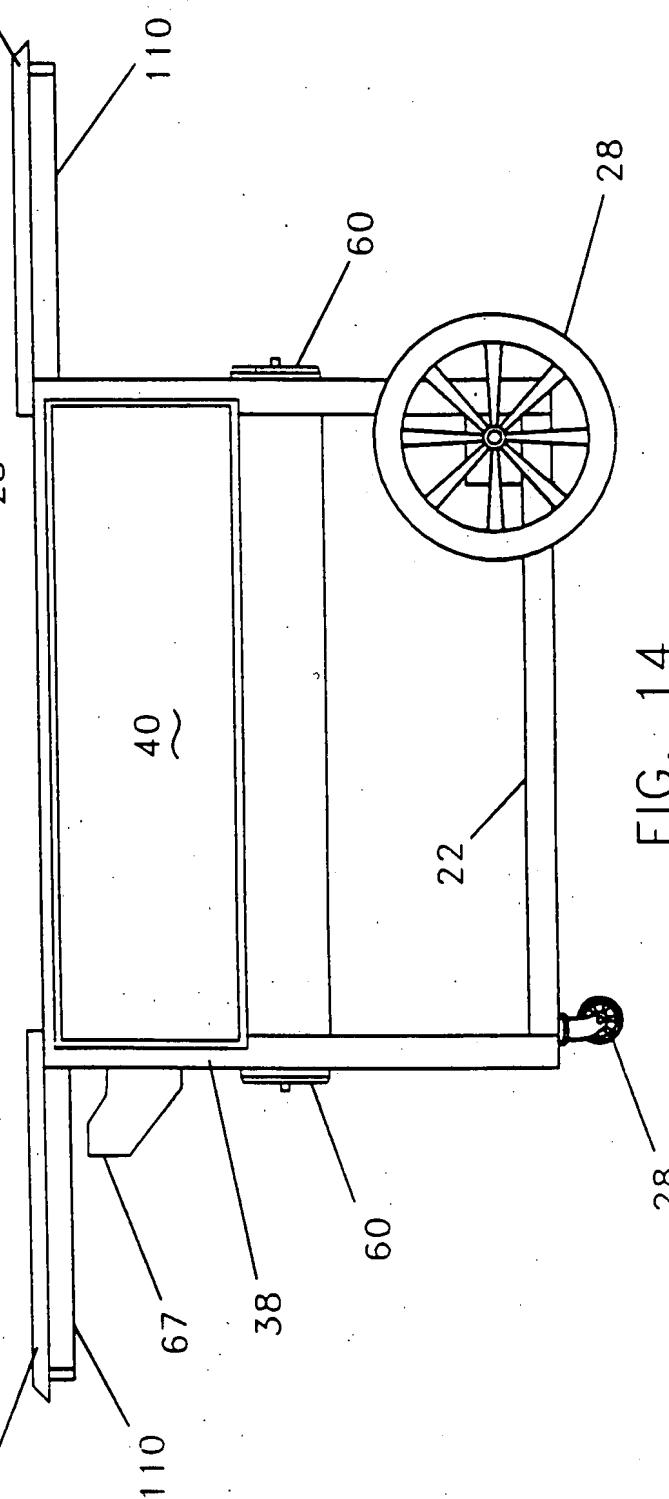


FIG. 14  
22  
28  
38  
67  
60  
110  
40  
28

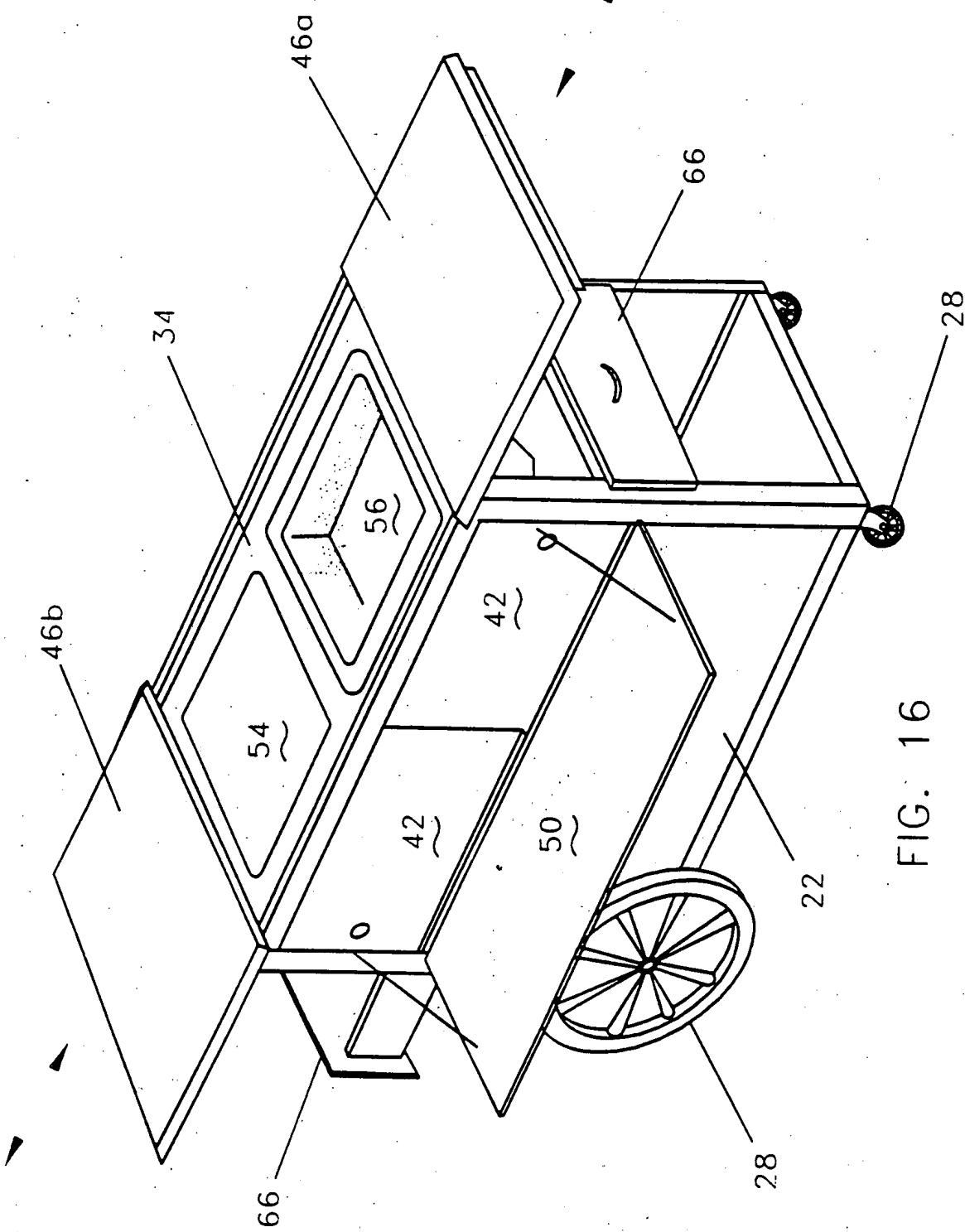


FIG. 16

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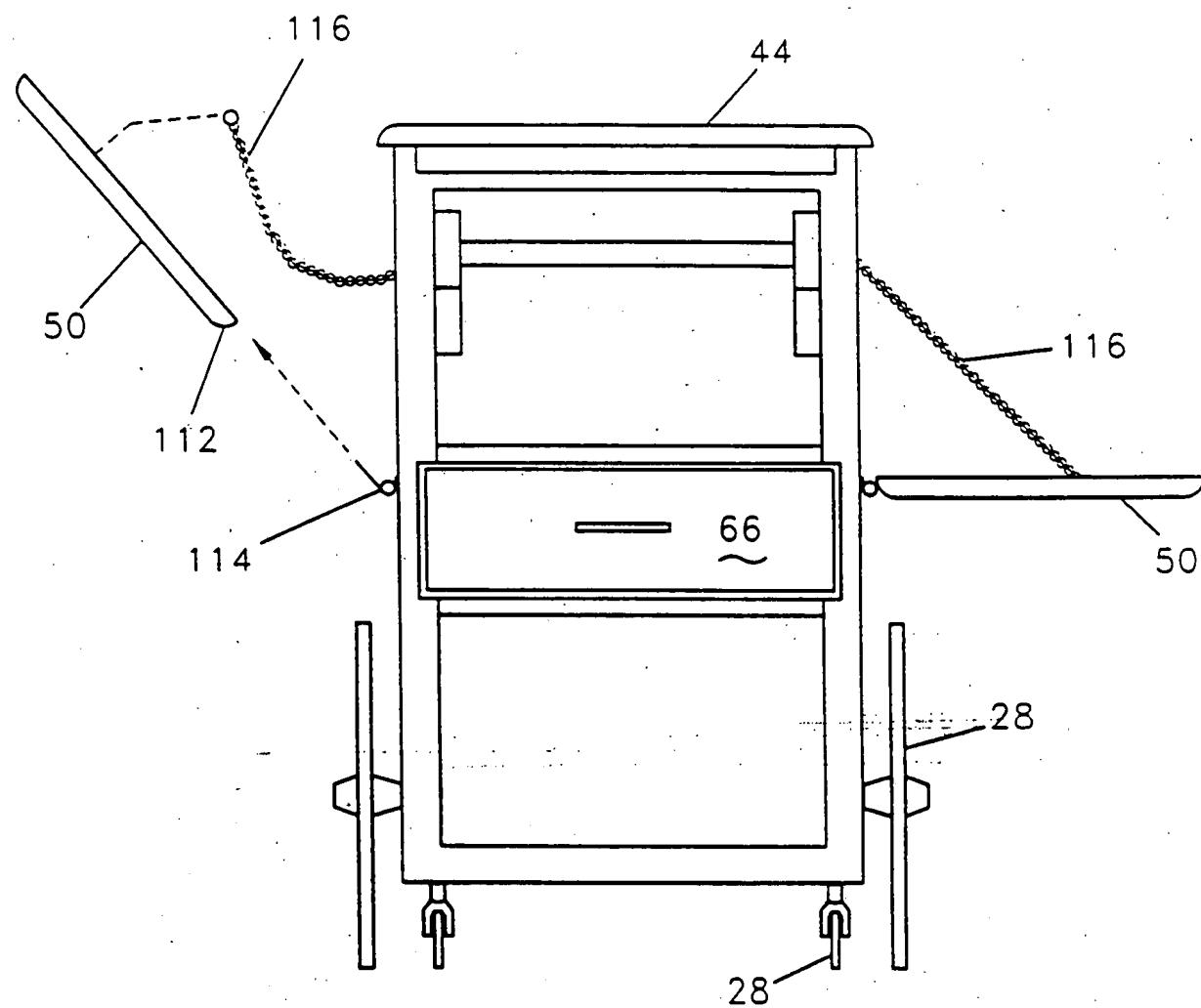


FIG. 17

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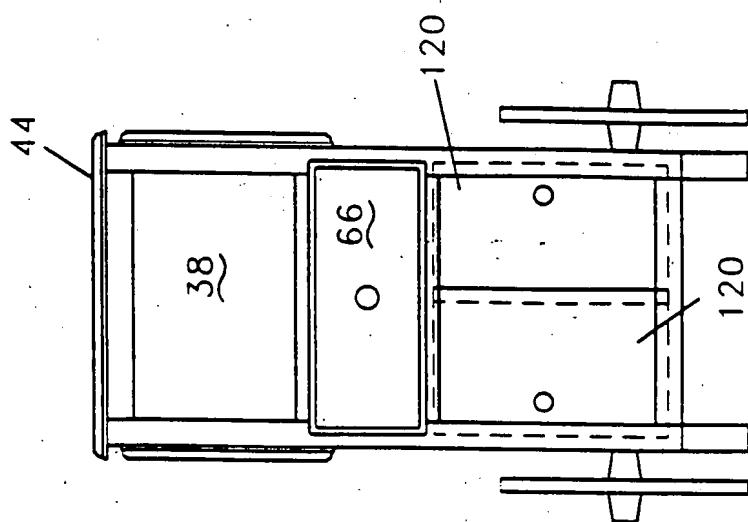


FIG. 19

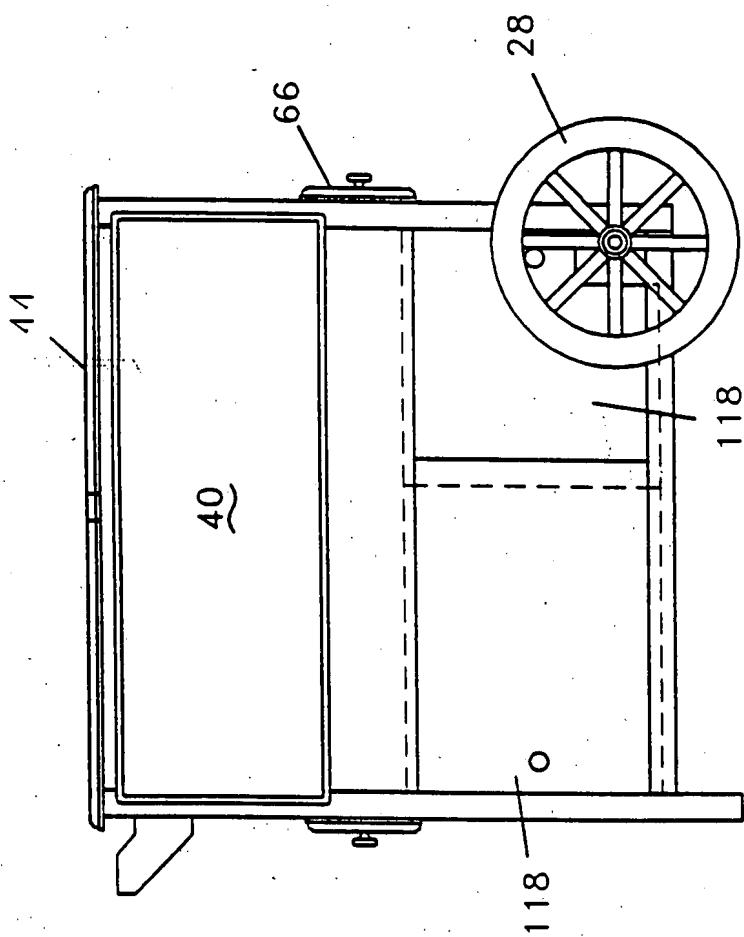


FIG. 18

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US94/00043

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(5) :B62B 3/02

US CL : 280/30, 47.35 ; 296/22

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 280/30, 47.34, 47.35, 656; 108/69; 296/22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X —	US, A, 1,327,242 (La Rue) 06 January 1920 See entire document	1-3, 5-9, 14-20
Y		—
X —	US, A, 3,873,114 (Brown) 25 March 1975 See Figs. 1 and 2	4, 10-13 1-3, 5-9, 14-20
Y		—
X —	US, A, 1,455,395 (Exum) 15 May 1923 See Figs. 3 and 4	4, 10-13 1-3, 5-9, 14-20
Y		—
X	Further documents are listed in the continuation of Box C.	<input type="checkbox"/> See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
27 MAY 1994	23 JUN 1994

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## INTERNATIONAL SEARCH REPORT

International application No.

US94/00043

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US, A, 3,741,606 (Grier) 26 June 1973 See Figs. 2 and 3	8,9
Y	US, A, 3,949,902 (Thompson) 13 April 1976 See Fig. 1	10-13
Y	US, A, 1,240,163 (Abadie) 18 September 1917	4
A	US, A, 1,964,805 (Barnes) 03 July 1934	NONE
A	US, A, 2,409,528 (Baunach) 15 October 1946	NONE